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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,162	01/21/2004	Ben Lu	02021	3760

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NEC LABORATORIES AMERICA, INC.  
4 INDEPENDENCE WAY  
PRINCETON, NJ 08540

EXAMINER

HUYNH, NAM TRUNG

ART UNIT	PAPER NUMBER
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2617

MAIL DATE	DELIVERY MODE
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07/26/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/762,162

Applicant(s)

LU ET AL.

Examiner

Nam Huynh

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 21 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 1/21/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Soulabail et al. (US 2002/0071415) (hereinafter Soulabail) in view of Smith (US 5,642,355).

Regarding claims 1, 6, 9, Soulabail discloses frame structure for cellular communications systems (title). In the scope of the invention, a Node B operating in time division duplex measures timing deviation or propagation delay between a plurality of mobile stations MS-1 and MS-1 respectively (estimating a propagation delay between a base station and a plurality of mobile stations in the time division duplex mobile communications network). Soulabail further teaches that the Node B may vary the guard periods within the timeslot structure defined in the Node B. This variation is

based on timing deviation or propagation delay (page 1, paragraphs 14-17). However, Soulabail does not explicitly disclose arranging time slots in a frame so that if the propagation delay between the base station and the first mobile station is less than the propagation delay between the base station and a second mobile station, the first station is permitted to transmit in a time slot before the time slot of the second mobile station in the frame. Smith teaches arranging time slots so that they are allocated in the order of their increasing distance from the base station so that transmission bursts contained in the timeslots will be delayed by an increasing amount due to propagation delays (column 4, lines 28-32). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Node B of Soulabail, to include arranging timeslots in a frame in order of their increasing distance from the base station, as taught by Smith, in order to extend the range of the cell substantially in excess of the normal limiting radius.

Regarding claim 2, Soulabail teaches that a UE determines frame synchronization of a cell from the frame timing used by the cell (page 1, paragraph 8).

Regarding claim 3, Soulabail teaches uplink and downlink slots (page 1, paragraph 13).

Regarding claims 4, 5, Soulabail teaches that a significant parameter in determining cell size is the time delay for transmitting a signal (propagation delay) to reach a mobile station and for its response to be received by the controlling base station (page 1, paragraph 5).

Regarding claims 7, 8, 10, and 11, the limitations are rejected as applied to claims 1 and 3. Soulabail further teaches that if the mobile station is close to the base station an idle timeslot near the front of the frame should be selected and if the mobile station is far from the base station an idle timeslot near the end of the frame should be selected (column 6, lines 22-26).

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Engels et al. (US 2004/0213174)


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nam Huynh whose telephone number is 571-272-5970. The examiner can normally be reached on 8 a.m.-5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NTH  
7/20/07

  
GEORGE ENG  
SUPERVISORY PATENT EXAMINER